

Amendments to the Claims

This listing of claims will replace all prior versions and listings of the claims in this application:

Listing of the Claims:

Claims 1-11 (Cancelled).

12. (Previously presented) The graft implant according to claim 30 wherein the assembled implant is pretreated or treated after assembly to incorporate a biologically active material selected from the group consisting of a bone morphogenic protein (BMP), an antibiotic, a growth factor, a nucleic acid and a peptide.

Claim 13-29 (Cancelled).

30. (Previously presented) An assembled graft implant comprising two or more individual segments fastened together with at least one pin machined from cortical bone, wherein at least one segment is a demineralized segment of allograft bone and at least one segment is a mineralized segment of allograft cortical bone, each segment having a hole drilled therein for receiving and frictionally engaging said at least one pin.

31. (Currently amended) The assembled graft implant of claim 30, wherein said at least one demineralized segment of allograft bone ~~demineralized bone segment~~ comprises a region of mineralized bone.

32. (Currently amended) The assembled graft implant of claim 30, wherein said demineralized segment ~~or mineralized segments are~~ is made from cortical bone, cancellous bone or both.

Claims 33-34 (Cancelled).

35. (Previously presented) The assembled graft implant of claim 61, wherein said pin is made from a material selected from the group consisting of stainless steel, titanium, cobalt chromium-molybdenum alloy, nylon, polycarbonate, polypropylene, polyacetal, polyethylene oxide and its copolymers, polyvinylpyrrolidone, polyacrylates, polyesters, polysulfone, polylactide, poly(L-lactide) (PLLA), poly(D,L-lactide) (PLA), poly(glycolide) (PGA), poly(L-lactide-co-D,L-Lactide) (PLLA/PLA), poly(L-lactide-co-glycolide) (PLA/PGA), poly(glycolide-co-trimethylene carbonate) (PGA/PTMC), polydioxanone (PDS), polycaprolactone (PCL), polyhydroxybutyrate (PHBT), poly(phosphazenes), poly(D,L-lactide-co-caprolactone) (PLA/PCL), poly(glycolide-co-caprolactone) (PGA/PCL), poly(phosphate ester), polyanhydrides, polyvinyl alcohol, hydrophilic polyurethanes, and a combination of bioabsorbable polymers.

Claims 36-38 (Cancelled).

39. (Previously presented) The assembled graft implant of claim 61 further comprising at least one segment comprised of demineralized bone.

Claims 40-60 (Cancelled).

61. (Previously presented) An assembled implantable bone graft suitable for use in humans comprising a first machined segment of allograft bone pinned with at least one pin to a second machined segment of allograft bone, and a soft tissue affixed between said first segment and said second segment.

Claims 62 -63 (Cancelled).

64. (Previously presented) The bone graft of claim 61, wherein said first machined segment and said second machined segment have respective through holes that are aligned for receiving said at least one pin.

Claims 65-67 (Cancelled).

68. (Previously presented) The graft implant of claim 61 wherein said at least one pin is machined from allograft cortical bone.

69. (Previously presented) The graft implant of claim 61 wherein the assembled implant is pre-treated or treated after assembly to incorporate a biologically active material selected from the group consisting of a bone morphogenic protein (BMP), an antibiotic, a growth factor, a nucleic acid and a peptide.

Claim 70 (Cancelled).

71. (Previously presented) The graft implant of claim 61 composed of two segments of cortical bone having cortical bone pins inserted in each of said segments.

72. (Previously presented) The implant of claim 61, having a superior vertebra engaging surface and an inferior vertebrae engaging surface, said surfaces having ridges or teeth machined therein to assist in retention of the implant when placed between the vertebrae.

Claim 73 (Cancelled).

74. (Previously presented) The assembled implant of claim 61, wherein the implant further comprises different segments of cortical bone, cancellous bone, demineralized cortical bone, demineralized cancellous bone, synthetic material, or combinations thereof.

75. (Original) The implant of claim 71 wherein insertion of reinforcing pins provides an implant with multiple load-bearing pillars.

76. (Original) The implant of claim 75 wherein said pins protrude from the surface of the implant to engage with inferior, superior or both surfaces of bone between which the implant is inserted.

77. (Previously presented) The implant of claim 61 which is sized for implantation between adjacent spinal vertebrae.

78. (Previously presented) The implant according to claim 61 further comprising a cancellous portion of bone implant that has been compression molded, and then affixed to other portions of cortical bone.

Claim 79 (Cancelled).

80. (Previously presented) The bone implant of claim 61, wherein at least one of said two or more bone segments is a mixed composition segment.

Claims 81-101 (Cancelled).

102. (Previously presented) The bone graft of claim 61, wherein said soft tissue comprises ligamentous tissue.

103. (Previously presented) The bone graft of claim 61, wherein said soft tissue comprises tendon, ligament, skin, or collagen sheets.

104. (Previously presented) The bone graft of claim 61, wherein said soft tissue comprises tendon.

Claim 105 (Cancelled).

106. (Previously presented) The bone graft of claim 61, wherein said soft tissue comprises dermis.

107. (Previously presented) The assembled graft implant of claim 30, wherein said demineralized segment is made from cancellous bone.

Claim 108 (Cancelled).

109. (Previously presented) The assembled graft implant of claim 30, wherein the implant comprises two pins.

110. (Previously presented) The bone graft of claim 61, wherein the implant comprises two pins.

111. (Previously presented) The assembled graft implant of claim 30, wherein at least one of segments is rectangular.

112. (Previously presented) The assembled graft implant of claim 30, wherein said two or more individual segments are rectangular.

113. (Previously presented) The bone graft of claim 61, wherein at least one of said machined segments is partially cylindrical.

114. (Previously presented) The bone graft of claim 61, wherein said machined segments are partially cylindrical.

115. (New) An assembled graft implant comprising three individual machined segments fastened together with at least one pin machined from cortical bone, wherein one machined segment is a demineralized segment of allograft bone and the other two machined segments are mineralized segments of allograft cortical bone, each machined segment having a hole drilled therein for receiving and frictionally engaging said at least one pin.

116. (New) The assembled graft implant of claim 115, wherein said demineralized segment of allograft bone is located between the two mineralized segments of allograft cortical bone.

117. (New) The assembled graft implant of claim 115, further comprising external grooves or teeth machined into the superior and inferior surfaces of the implant.

118. (New) The assembled graft implant of claim 115, wherein said demineralized segment of allograft bone comprises a region of mineralized bone.

119. (New) The assembled graft implant of claim 115, wherein said demineralized segment is made from cortical bone, cancellous bone or both.

120. (New) The assembled graft implant of claim 119, wherein said demineralized segment is made from cancellous bone.

121. (New) The assembled graft implant of claim 30, wherein at least one demineralized segment is a machined segment of allograft bone.

122. (New) The assembled graft implant of claim 61, wherein the soft tissue is affixed via pinning between said first segment and said second segment, wherein the soft tissue is sandwiched between said first and second machined segments of allograft bone.